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REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application.

Claims 2-17 are now present in this application. Claims 2, 6, 10 and 18 are independent. By this Amendment, claims 4, 5 and 9 are amended to place them in more grammatically correct English. No new matter is involved.

Reconsideration of this application, as amended, is respectfully requested.

Claim Amendments

Applicant has amended claims 4, 5 and 9 to make them more grammatically correct, e.g., by changing the terms "the header" either to - - header - - or - - a header - -. Entry of these amendments is proper because they place the claims in better form.

Rejections under 35 U.S.C. § 103

Claims 1-4, 8 and 11-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 7,086,077 to Giammaressi in view of U.S. Patent Application Publication 2003/0154480 to Goldthwaite et al. ("Goldthwaite") and further in view of U.S. Patent Application Publication 2006/0015574 to Seed et al. ("Seed"). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action and is not being repeated here.

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Because the rejection is based on 35 U.S.C. § 103, what is in issue in such a rejection is "the invention as a whole," not just a few features of the claimed invention. Under 35 U.S.C. § 103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under Section 103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. *See In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. *See Medtronic, Inc. v. Cardiac Pacemakers, Inc.*, 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 U.S.C. § 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. *Uniroyal Inc. v. F-Wiley Corp.*, 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), *cert. denied*, 488 U.S. 825 (1988); *Ashland Oil, Inc. v. Delta Resins & Refineries, Inc.*, 776 F.2d 281, 293, 227

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USPQ 657, 664 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1017 (1986); *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." *C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." *See In re Dembiczkak*, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. *See In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

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Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the Applicant to come forward to rebut such a case.

Initially, Applicant notes that this rejection is moot with respect to claim 1, which is canceled.

With respect to claim 2, Applicant respectfully submits that none of the applied references discloses or suggests the combination of features recited in claim 2, including in which the server judges whether A/V streams can be outputted in response to the request from the renderer; and a step in which the server provides the A/V streams to the renderer sequentially or simultaneously if the A/V stream can be outputted, or outputting a server unavailability message to the renderer if the server judges that the A/V streams cannot be outputted, wherein, in the step of judging whether A/V streams can be outputted, the server compares transmission time of entire A/V streams and A/V stream transmission time according to a defined reproduction capability of the server required for reproducing A/V streams, and then judges whether the A/V streams can be outputted.

Giammaressi is limited to determining bitrates for different quality levels of its data stream but contains no disclosure of comparing the transmission time of entire A/V streams with the determined bitrates for different quality levels of its data stream, as claimed. The Office Action states that this feature is disclosed by Giammaressi's disclosure of steps 210 and 214. Applicant respectfully disagrees with this assertion, because nowhere does Giammaressi disclose determining

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the transmission time of entire A/V streams, let alone comparing the transmission time of entire A/V streams with anything.

In response to this argument, the Office Action, on page 2, indicates that Giammaressi clearly teaches determining the total load on at least one of the video server resources, including data storage, and it is then determined if the introduction of the newly requested video stream would exceed the bandwidth limit of the device, referencing col. 6, lines 14-44.

In response to this argument, Applicant respectfully submits that the Office has not met its burden of making out a *prima facie* case that "determining the total load on at least one of the video services resources" anticipates the claimed invention, which positively recites a combination of features, including wherein the server compares transmission time of entire A/V streams and A/V stream transmission time according to a defined reproduction capability of the server required for reproducing A/V streams, and then judges whether the A/V streams can be outputted.

In order for a reference to anticipate a claim, that reference must disclose what is claimed, either explicitly or inherently. Most certainly Giammaressi does not explicitly disclose "wherein . . . the server compares transmission time of entire A/V streams and A/V stream transmission time according to a defined reproduction capability of the server required for reproducing A/V streams, and then judges whether the A/V streams can be outputted," as claimed.

Moreover, in order to inherently anticipate a claim, a reference must not just possibly, or not just probably, but necessarily disclose what is claimed. *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) and *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

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As stated in col. 6, lines 18+ of Giammaressi, ". . . a determination is made as to the amount of bandwidth required, from each of at least one bandwidth constrained resource, to process the request. This determination also considers the existing load placed upon the at least one bandwidth constrained resource due to other requests presently being satisfied by the information provider."

Giammaressi mentions nothing about a server comparing transmission time of entire A/V streams and A/V stream transmission time according to a defined reproduction capability of the server required for reproducing A/V streams, as claimed, and the Office Action does not explain how or why determining an amount of bandwidth requirement from a bandwidth constrained resource and the existing bandwidth load due to other requests is the same as a server comparing transmission time of entire A/V streams and A/V stream transmission time according to a defined reproduction capability of the server required for reproducing A/V streams.

Applicant respectfully submits that server bandwidth for one-to-many Video on Demand (VOD) systems, such as Giammaressi's is typically found by multiplying the number of simultaneous users by the average bitrate of encoded A/V content. See, for example, the enclosed four page Flash media Server Article from the Adobe Developer Center. In view of this, Applicant does not understand, and the Office Action does not explain how or why, Giammaressi's bandwidth load determinations anticipate the claimed invention.

Simply stating that Giammaressi makes bandwidth determinations does not make out a *prima facie* case of anticipation of this aspect of the claimed invention.

Goldthwaite, the secondary reference, is applied to teach a home network. However, Goldthwaite only discloses a home network as one example of a network that is usable with its

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invention, where Goldthwaite's invention concerns correlating a network user's collected data in a historical format, which has nothing to do with the primary reference, which determines if requested information can be provided to a network subscriber. In other words, Goldthwaite has nothing to do with determining whether requested information can be provided to a network subscriber and, for at least this reason, one of ordinary skill in the art would have no proper incentive to look to Goldthwaite to modify Giammaressi's system to use it in a home network.

In response to this argument, the Office Action asserts that Giammaressi discloses in col. 5, lines 8-10 that any network may be used with its disclosed invention. Actually, Giammaressi discloses that networks which use different signal transmission media, e.g., fiber optic networks, telephone networks and cable TV networks can use its invention. There is no mention of a home network in Giammaressi, which is limited not by the type of transmission medium, but by the structure in which it is located. No such teaching is found in Giammaressi.

As pointed out by the Court of Appeals for the Federal Circuit, one "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1780, 1783 (Fed. Cir. 1988). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability, which is the essence of improper hindsight.

Seed, the tertiary reference, is applied to disclose outputting an unavailable message if a server judges that A/V streams cannot be outputted. However, Seed fails to remedy the aforementioned shortcoming in Giammaressi.

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Further, with respect to claims 4, 11 and 11-18, the Office Action includes a reference to U.S. Patent 5,671,377 to Bleidt. Based on the Examiner's responsive arguments, Applicant agrees that Bleidt is incorporated by reference into Giammaressi. However, the entire concept of a server comparing a transmission time of entire A/V streams and a stream transmission time according to a defined reproduction capability of the server is missing from each applied reference, so, no matter how they are combined, they cannot possibly result in, suggest, or otherwise render obvious, the claimed invention.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the subject matter recited in currently pending claim 2 or claims 3, 4, 8 and 11-18, which depend from claim 2.

Reconsideration and withdrawal of this rejection of claims 1-4, 8 and 11-18 are respectfully requested.

Claims 6 and 7 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent 7,086,077 to Giammaressi in view of U.S. Patent Application Publication 2003/0154480 to Goldthwaite et al. ("Goldthwaite") and further in view of U.S. Patent Application Publication 2006/0015574 to Seed et al. ("Seed") and further in view of U.S. Patent 6,917,569 to Lam et al. ("Lam"). This rejection is respectfully traversed.

Initially, Applicant respectfully submits that the aforementioned Giammaressi-Goldthwaite-Bleidt-Seed reference combination does not make out a *prima facie* case of obviousness of the subject matter of claim 2, for reasons stated above. Applicant also agrees

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with the admission in the Office Action that the Giammaressi-Goldthwaite-Seed reference combination applied in the rejection of claim 1 does not disclose wherein, in the step of judging whether A/V streams can be outputted, the server compares the overall transfer rate of the A/V streams being reproduced and a predetermined A/V stream transfer rate on the basis of the distance between a position where the A/V stream requested by the renderer has been recorded and a position where the A/V stream being reproduced has been recorded, as claimed.

In an attempt to remedy this deficiency, the Office Action turns to Lam, which is directed to managing a disk array storage device by using dynamic reallocation of data on a disk array storage device based on actual usage (col. 3, lines 15-17) and has no disclosure whatsoever of judging whether A/V streams can be output to a renderer. Unfortunately, the Office Action never explains why one of ordinary skill in the art would be motivated to modify the base reference combination, which never discusses managing a disk array storage device, by turning to a disk array storage device managing system, in general, or by determining hard drive seek times to judge whether A/V streams can be outputted to a renderer. The alleged motivation to make the proposed modification of the base reference combination is "for the benefit of providing dynamic disk allocation based on actual usage." Unfortunately, the Office Action fails to demonstrate that a user of the base reference combination's server has a disk array that has a need for dynamic disk allocation or would be motivated to determine whether A/V streams can be output to a renderer. In this regard, Lam has no disclosure of being used to determine whether A/V streams can be output to a renderer.

In fact, instead of addressing the invention recited in claim 6, the Office Action only tries

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to address the admitted shortcoming of the applied references to disclose determining the read time from the storage unit based on a distance between two memory locations. Unfortunately, this is not what is claimed. The claimed invention is reproduced above, and recites a combination of features, including wherein, in the step of judging whether A/V streams can be outputted, the server compares the overall transfer rate of the A/V streams being reproduced and a predetermined A/V stream transfer rate on the basis of the distance between a position where the A/V stream requested by the renderer has been recorded and a position where the A/V stream being reproduced has been recorded, as claimed. For example, "a position where the A/V stream requested by the renderer has been recorded and a position where the A/V stream being reproduced has been recorded", as claimed, is far more detailed than the target set up by the Examiner to achieve, i.e., two memory locations. In other words, the rejection never even tries to render the claimed invention obvious. Rather, it improperly redefines the invention and merely tries to render that not-claimed invention obvious.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the subject matter recited in currently pending claims 6 and 7.

Reconsideration and withdrawal of this rejection of claims 6 and 7 are respectfully requested.

Claims 5 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 7,086,077 to Giammaressi in view of U.S. Patent Application Publication 2003/0154480 to Goldthwaite et al. ("Goldthwaite") and further in view of U.S. Patent Application Publication

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2006/0015574 to Seed et al. ("Seed") and further in view of U.S. Patent 6,189,071 to Bachmat. This rejection is respectfully traversed.

Initially, Applicant notes that the Giammaressi-Goldthwaite-Seed reference combination does not render obvious the subject matter of claim 2, from which claims 5 and 9 depend, for the reasons discussed above. Moreover, Bachmat is not applied in this rejection to remedy the aforesaid shortcomings of the Giammaressi-Goldthwaite-Seed reference combination with respect to claim 2. So, even if one of ordinary skill in the art were properly motivated to modify the Giammaressi-Goldthwaite-Seed reference combination based on Bachmat, as suggested, the so-modified version of the base reference combination would not render the claimed invention obvious.

Furthermore, Bachmat is directed to managing resources in a disk array storage device and has nothing whatsoever to do with judging whether A/V streams can be outputted to a user, especially a user that has not been shown to have a disk array storage device.

Unfortunately, the Office Action never explains why one of ordinary skill in the art would be motivated to modify the base reference combination, which never discusses managing a disk array storage device, by turning to a disk array storage device managing system, in general, or by determining hard drive seek times to judge whether A/V streams can be outputted to a renderer. The alleged motivation to make the proposed modification of the base reference combination is "for the benefit of providing dynamic disk allocation based on actual usage." Unfortunately, the Office Action fails to demonstrate that a user of the base reference combination's server has a disk array that has a need for dynamic disk allocation or would be motivated to determine

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whether AV streams can be output to a renderer. In this regard, Lam has no disclosure of being used to determine whether AV streams can be output to a renderer.

In response to these arguments, the outstanding Office Action indicates that Giammaressi incorporated by reference, the Bleidt reference, which discloses managing a disk array storage device. However, no matter what disk array storage device management techniques are used by Bleidt, none of the references discloses the subject matter of claim 2, from which claims 5 and 9 depend.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the subject matter recited in currently pending claims 5 and 9.

Reconsideration and withdrawal of this rejection of claims 5 and 9 are respectfully requested.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 7,086,077 to Giammaressi in view of U.S. Patent Application Publication 2003/0154480 to Goldthwaite et al. ("Goldthwaite") and further in view of U.S. Patent Application Publication 2006/0015574 to Seed et al. ("Seed") and further in view of U.S. patent 5,822,530 to Brown. This rejection is respectfully traversed.

Initially, Applicant notes that the Giammaressi-Goldthwaite-Seed reference combination does not render obvious the subject matter of claim 2, from which claim 10 depends, for the reasons discussed above. Moreover, Brown is not applied in this rejection to remedy the aforementioned shortcomings of the Giammaressi-Goldthwaite-Seed reference combination with respect to

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claim 2. So, even if one of ordinary skill in the art were properly motivated to modify the Giammaressi-Goldthwaite-Seed reference combination based on Brown, as suggested, the so-modified version of the base reference combination would not render the claimed invention obvious.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the subject matter recited in currently pending claim 10.

Reconsideration and withdrawal of this rejection of claim 10 is respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Date: May 27, 2008

Respectfully submitted,

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Attachment: Adobe Developer Center article: Calculating bandwidth needs for Flash media Server – 4 pages.

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Flash Media Server Article

Calculating bandwidth needs for Flash Media Server 3

Bandwidth calculations

You can easily estimate bandwidth for two different types of applications: a one-to-many application, such as a video-on-demand system; and a many-to-many application, such as a video conferencing application. For each example you can follow a simple formula for calculating both the server bandwidth (required to determine the number of software licenses you need) and the client bandwidth (calculated as part of your bandwidth strategy to ensure good quality of service to each client).

Example 1: One to many

This sample application is a one-way video-on-demand system that streams recorded video at the user's request. Flash Media Server serves only one stream to each user (see Figure 1).

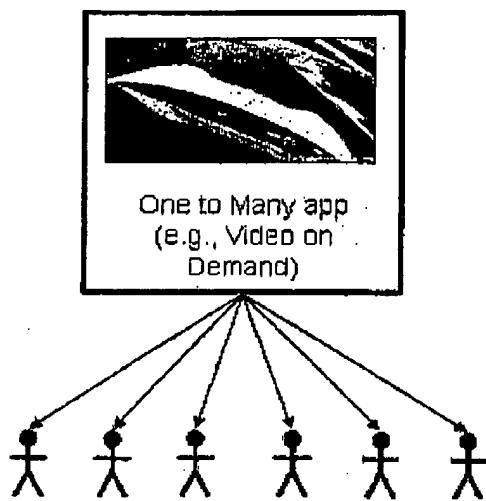


Figure 1. One-to-many video-on-demand system

Bandwidth calculations

Here are the bandwidth calculations you would make:

- Calculating server bandwidth needs (BWs):

$$BWs = N \times S$$

N = number of simultaneous users (subscribers)
 S = average bitrate of encoded A/V content
- Calculating client bandwidth needs (BwC):

$$BwC = S$$

S = average bitrate of encoded A/V content

Sample calculation

Calculate the overall server bandwidth needed to stream video encoded at 500 Kbps to 1000 simultaneous users:

$$500 \text{ Mbps} = 1000 \times 500 \text{ Kbps}$$

This calculation determines the overall bandwidth and can help you determine how many servers and licenses

are needed. For example, if your server hardware configuration is capable of 600 Mbps throughput, you would need only one server and license.

Of course, if you wanted to stream to more users, you would need as many servers and licenses as are required to cover your overall server bandwidth. For example, 10,000 simultaneous users will require the following:

$$5000 \text{ Mbps} = 10,000 \times 500 \text{ Kbps}$$

Assuming each server configuration is capable of 600 Mbps, you would need:

$$8.3 = 5000 \text{ Mbps} / 600 \text{ Mbps}$$

This rounds up to nine servers and licenses.

Adjusting the calculation for multiple bitrates

The preceding calculations assume that content is encoded at a constant bitrate. Most often, however, you will vary the bitrate of the content to suit the viewing audience. This affects your bandwidth needs at both the client and server level.

For example, suppose in the previous example you estimated that half of the 1000 simultaneous users were going to connect via 350 Kbps DSL modem and the other half via 3 Mbps cable modem. Suppose further that while the video encoded at 500 Kbps was appropriate for the cable viewers, you wanted to encode a separate video at 150 Kbps for the DSL modem users.

In this case, the total bandwidth required of the system is lowered to 325 Mbps:

$$325 \text{ Mbps} = (500 \text{ Kbps} \times 500) + (150 \text{ Kbps} \times 500)$$

Example 2: Many to many

This example shows a number of people connect to an online conference room. While in the conference room, each person is broadcasting their own audio and video (via a webcam, for example) while receiving the audio and video broadcasts from others in the room (see Figure 2).

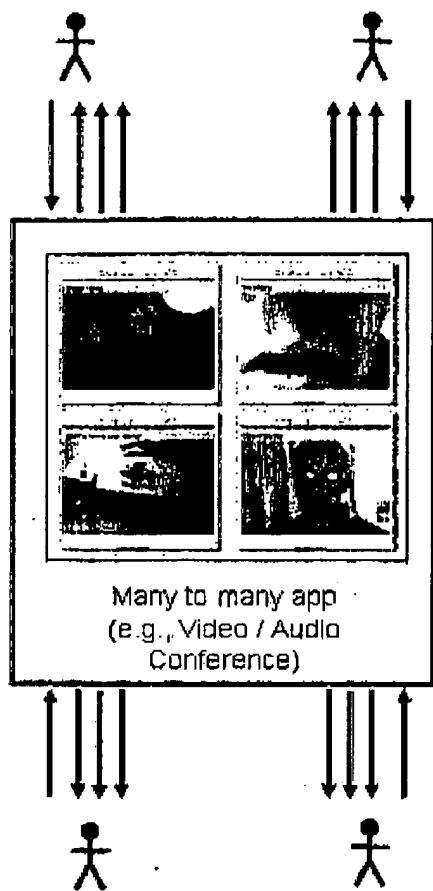


Figure 2. Many-to-many video/audio conferencing

Calculating the bandwidth estimates here is very similar to Example 1. However, the number of streams increases exponentially. In this case, Flash Media Server needs to serve x^2 number of streams where x is the number of simultaneous users in a room.

For example, if there were four people in a room, the first person would send (publish) one stream and receive three other streams for a total of four streams. Likewise, the second, third, and fourth persons would also consume four streams each. Therefore the total number of streams that Flash Media Server serves in this case is 16—four people using four streams each, or (thought about in a slightly different manner) four publishers of streams and four consumers or subscribers of streams.

Bandwidth calculations

Here are the bandwidth calculations you would make:

- Calculating server bandwidth needs (BWs):

$$BWs = (P \times N) \times S$$

P = number of publishers
 N = number of subscribers
 S = average stream bitrate of encoded A/V content
- Calculating client bandwidth needs (BWc):

$$BWc = P \times S$$

P = number of publishers
 S = average stream bitrate of encoded A/V content

Sample calculation

Server bandwidth needed for a four-person webcam chat using 100 Kbps streams:

$$4.8 \text{ Mbps} = (4 \times 4) \times 300 \text{ Kbps}$$

Client bandwidth needed for a four-person webcam chat using 100 Kbps streams:

$$900 \text{ Kbps} = 3 \times 300 \text{ Kbps downstream}$$

$$300 \text{ Kbps} = 1 \times 300 \text{ Kbps upstream}$$

How many users can you support on a single server? In this example, each video conference room generates a bandwidth of 4.8 Mbps. Again assuming 600 Mbps server machine throughput, you can have $600 \text{ Mbps} \div 4.8 \text{ Mbps} = 125$ rooms. Because each room has four participants, you can get $125 \times 4 = 500$ simultaneous users on one server.

No limit on the number of streams

This example illustrates another important aspect of Flash Media Server: there is no limit on the number of streams it can serve. Each user of your application (or, said another way, each connection) can publish or subscribe to an unlimited number of streams as long as the total peak bandwidth-per-second limit is not reached.

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